

ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460



OFFICE OF
WATER

MEMORANDUM

SUBJECT: National Information Needs to Support Source Water Contamination Prevention Programs

FROM: Joan Harrigan-Farrelly, Chief
Prevention Branch

TO: Addressees (National Clean Water Program contacts, EPA Regional Source Water Offices and State Source Water Program Managers)

Attached for your review and comment is a first draft of what information is needed at the national level to help EPA support state and local efforts at source water protection as well as to measure the success of source water contamination prevention efforts aimed at lowering public health risks. As you may recall, we had a list of over ninety measures suggested by a state and EPA workgroup. The charge coming out of that meeting and subsequent meetings and phone calls was to reduce the measures to a "handful" of meaningful measures. We spent the last few months working on reducing the measures and came up with the following six pieces of information that are described in the attached matrix:

1. Change in susceptibility of water systems relative to preventative plans implemented;
2. Change in the most prevalent potential contaminant source threats of concern to each state within source water areas;
3. Change in the ambient source water quality;
4. National locational data layer of source water protection areas;
5. State and Tribal source water assessments completed and made available to the public; and
6. Trends in source water protection cost needs met by each state.

At the stakeholder meeting held on September 11, 2000 and at various national meetings (GWPC, and ASDWA) states asked that we try to balance national needs and requirements with state needs and provide some flexibility. Therefore, for each piece of information, the attached draft discussion paper gives some preliminary thoughts on options on how to balance national consistency with state flexibility for each of these pieces of information. Please note that this is a first draft. We realize that behind each of these six points are a variety of issues related to national consistency, accessibility, and burden. For instance, some of the measures will require much discussion with Clean Water Programs.

We look forward to your feedback. We not only want to offer you the opportunity to comment on this draft, but to participate in an extended process that may involve a series of face-to-face meetings and conference calls starting in early January with all interested state and EPA staff. For those who participated in the June and September meeting, we urge your continued involvement. For others interested in participating in the workgroup, building on the state and EPA participants that developed the original list of potential measures, please contact Betsy Henry at (202) 260-2399. We would like to renew our dialogue with the workgroup by early January, so we are looking for initial review of this draft by January 3. In this way, the workgroup can have a more complete picture of issues and concerns that need to be resolved, and can more effectively work towards a final decision.

In order to continue the Underground Injection Control program measures on a parallel track, the UIC Program is completing a similar analysis of information needs. Attached is a memorandum and draft list of measures distributed to a state/EPA workgroup asking for comment by December 15. A revised draft will be distributed with the next draft of the source water measures.

If you have any questions or concerns, please feel free to contact me at (202) 260-6672 .

DRAFT SUMMARY CHART PAGE ONE
Source Water Contamination Prevention Key National Information Needs

Are Source Water Contamination Prevention Measures Making a Difference to Public Health?		
1. Change in susceptibility of PWS as determined by State/Tribe, relative to protection plans implemented.	2. Changes in identified potential contaminant source threats found in source water protection areas.	3. Trends in ambient source water quality (Ground Water and Surface Water)
<i>Issues in consistency and how to nationally characterize changes in susceptibility when there is state variability in determining susceptibility.</i>	<i>Issues of accessibility from state SWAPs and likelihood of the states updating inventory information</i>	<i>Issues of cost and priority of drinking water relative to other WQ problems</i>
<i>Baseline elements needed:</i>	<i>Baseline elements needed:</i>	<i>Baseline elements needed:</i>
1.1 # of PWSs and the population served by level of susceptibility as determined by state or tribal assessments Options: A. State Def. Of susceptibility, with no standards on reporting. B. National Agreement that builds on state's existing susceptibility approach but allows national characterization. C. National def. Of H/M/L and susceptibility that states use to translate their SWAP results. D. Combine national data layers to determine suscept (no reporting burden).	2.1 Most prevalent potential contaminant sources or types of contaminants found in SWPAs of most concern to state or tribe. Options: A. States incorporate most prevalent contaminant sources found in SWPAS into their 305(b) data B. States report # of areas where potential sources have been found by contaminant type (VOCs, IOC, microorganisms, pesticides) C. States report # of SWPAS with contaminant sources found within them.	3.1 # and location of 303 (d) listed waters designated as a drinking water use
1.2 # of PWS categorized by level of susceptibility with state or tribe recognized source water contamination prevention plan. This includes watershed plans or watershed restoration action strategies that address threats to the drinking water source.		3.2 # and location of 305(b) threatened waters designated as a drinking water use
<i>"Protection indicators" that are outside of the "State SWAP":</i> 1.3 SRF # States with requirements for water conservation plans linked to DWSRF loans		3.3 # of states with WQS in place for all surface waters used as public water supplies
1.4 SSA: # of designated sole source aquifers, projects reviewed by EPA, and ancillary actions taken by communities to protect sole source aquifers.		
1.5 CWA: # Watershed Restoration Action Strategies (WRAS) addressing SWP		

DRAFT SUMMARY CHART PAGE TWO
Source Water Contamination Prevention Key National Information Needs

What Information will help EPA develop and promote cross-program source water policies?		
4. National Locational Data Layer of the source water protection areas	5. # of State and Tribal Source Water Assessments completed (delineations, inventories, susceptibility, made available to public)	6. Trends in Source Water Protection cost needs met
<i>Issues in consistency and how to nationally pull together different datasets</i>	<i>No anticipated issues</i>	<i>Issues of cost and priority of drinking water relative to other WQ problems</i>
<p>Driver of SWP policy adoption by EPA and other federal programs.</p> <p>Associated accountability baseline element for EPA: # of federal programs using state source water data in their programs</p>	<p>Driver : Public Accountability for SDWA Amendments and DWSRF funds spent.</p>	<p>Driver of EPA and Congressional Discussions of budgets.</p> <p>Potential pieces: SRF: # of states allocating Sec. 1452 DWSRF source water protection set-asides</p>
		<p>State: Total \$ needed as calculated by the State, to implement State certified local SWP plans to lower susceptibility</p>
		<p>State/Fed: \$ targeted to SWP prevention efforts, by state (Fed, State, Local, Private \$) -- either as a total number, or as a % of total state environmental budget.</p>
		<p>CWA: # or % of total projects funded with CWA allocated dollars directed to solve a source water threat (subset of the total cost question in the source water section above)</p>

DRAFT DISCUSSION PAPER OF SOURCE WATER PROTECTION NATIONAL INFORMATION NEEDS

Are the source water contamination prevention efforts making a difference for public health?

Potentially, there are three “ultimate” measures that in combination answer this question:

- S** Trends in susceptibility of public water supplies relative to protection actions taken;
- S** Trends in the nature of potential contaminant threats of high concern in source water areas; and
- S** Trends in ambient source water quality over time.

Together, these give a sense of how source water protection is lowering the risks to public health based on the assumption that by lowering the susceptibility of a water supply to contamination and reducing the number of threatening contaminant sources, one is reducing the risk to public health.

What are Source Water Protection Policy Drivers?

At the same time, there is information that strengthens EPA’s ability to report to congress on progress of the SDWA 1453, make decisions about future policy, and act as a catalyst for other programs to support source water protection. These are:

- S** Collecting information on the number of state source assessments completed: delineations, inventories, and susceptibility determinations made available to the public
- S** Creating a national locational data layer of the state-defined source water protection areas
- S** Providing a reliable national picture of resources spent on source water across the country and resources needed.

National, State and Tribal value of National Measures

Strong Public Message

It is a strong national message to the public, as well as a strong message from any state or tribal government, if we can show the public that actions taken to prevent contamination of source water are actually lowering the risk of that water supply being contaminated, or has resulted in better water quality. It is something that is easily explainable and straight forward: decreasing the risk of contamination of the source, decreases the risk of human health threats. The source water assessments provide the baseline of this explanation: the source water assessments will identify the highest priority risks. Reassessing susceptibility tells the public how actions taken are lowering the contamination risk to the water supply.

Also, it is a strong national message if we can show the actual source water areas across the country, promoting national awareness of the value of these areas and the need to manage these sources wisely, and demonstrating that national prevention programs are targeting actions in these areas.

Accountability to Congress

There is a national need to show Congress not only that source water assessments are being completed, but that these assessments are valuable and meaningful, and leading to protective activities. The source water assessments are intended to inform decisions about what actions to take to prevent contamination of the sources. A measure that shows the trends of preventative actions leading to lowering risks, shows that the approach of providing funds and guidance to states leads to effective action.

Also, the visual effect of seeing where the source water areas are across the country is more powerful and informative to federal program managers and congressional members in helping them to shape future national priorities. The information can also be displayed by state and local jurisdictions.

Reliable resource need evaluations are also of value to national programs and Congress as they make decisions over funding priorities.

Incorporation of source water into SDWA regulatory framework

If this is going to happen, we need to demonstrate that protection leads to lower risk. If we can develop a reliable approach that is nationally consistent to identify when actions are effective at lowering the risks to source water, then it bolsters the capacity to use source water protection considerations in future SDWA rules or revisions.

Promoting the integration of source water protection policies into other national programs

Part of EPA's job in promoting a multi-barrier approach to safe drinking water is to develop national policies within EPA and with other federal agencies that are supportive of source water protection. However, for EPA to assist in this way, there needs to be information collected nationally that other federal programs can use to justify changes in policy, rules and regulations to support source water protection. A national locational data set of source water protection areas would be one of the most valuable and least burdensome ways of promoting source water protection with other agencies

Locational data on the source water areas will be invaluable to supporting inclusion of source water provisions in more pollution prevention guidance, regulation and rules of other federal programs. For instance, in the past we have been unable to justify inclusion of source water protection in other national rules because we lacked the information on the national aggregate land mass of source water protection areas. In the future, if we had this data layer compiled and accessible, we would be better able to evaluate the degree of impacts. In the past we have been unable to show the national extent of federal land's and facilities relationship to source water areas. With a national

data layer, it helps other programs decide if it is a national priority to set policies for source water or whether it is regionalized.

Establishing a Baseline and National Consistency While Minimizing Burden on states

Showing a trend requires a baseline, using data already collected or scheduled to be collected in the near term. Also, if the measure is to be valuable for both promoting a meaningful public message on the state of the nation's source waters and accountability to congress, it needs to have a level of consistency across the country. National consistency is important if this information is going to be used as part of future regulatory flexibility decision making, reporting to congress, and delivering a meaningful public message. While states have agreed that it is important to have a coherent national message, they have asked that the burden to collect this information be minimal. The value to states to collect this information should be equal if not greater than the national reasons, unless the value is so great nationally and the burden is close to none for the state. Ideally there would be little additional burden on the states because they would see the value of gathering this information at the state level.

The Devil is in the Details: For each of the three proposed trends, as well as the additional three data sets to support national SWP policy development, the difficulty is in the details. Using the measuring sticks of *national and state value, readily available or accessible information, national consistency, and minimizing burden* the following analysis goes through each to examine the options for what is needed to collect data that will may show these trends. Each option varies in how it holds up each of these measuring sticks.

The intent is to work through these options with states and regions to decide on the most useful combination. The decision will come from balancing national consistency and value, and state burdens and value.

Examination of Number One: *Trends in susceptibility of public water supplies relative to protection actions taken*

Part of the baseline for this trend could be the information collected through the state and tribal source water assessments due for completion by 2003. This data is being collected by states and tribes. The first baseline piece of information is on susceptibility. The second is on protection plans that are currently in place for water supplies across the state.

S # of PWS and the population served by level of susceptibility as determined by state and tribal source water assessments.

State Value depends on location data: For this to be maximally valuable to states, they need to be collecting this information so that they can identify throughout the state the location of the most susceptible water supplies. This is valuable because it helps to direct other state programs to target preventative activities within the highly susceptible areas. This information could be correlated with information on where preventative actions are

being implemented to protect the source water, to see if protection planning is leading to risk reductions.

National Value: Collecting information on susceptibility and pointing to where the states are identifying highly susceptible source waters, helps us to direct other federal programs, congress and the public to areas of concern for the states. The national value of having a baseline of the source waters across the state using the relative measure nomenclature of H/M/L is its straightforward and consistent public message that translate the results of the state assessments to congress and the public in terms of the cumulative degree of concern that is being raised about the threats to source water from these assessments. It also bolsters our ability to meet our task of influencing other EPA programs and federal agencies to help protect drinking water sources identified as of concern to each state.

Current Availability: State source water assessments all include a susceptibility determination for each PWS.

Consistency: Not all states give each system an over all H/M/L. Harder to nationally explain susceptibility with out overall rankings.

Burden: Added burden to convert/translate the susceptibility determinations to high/medium/ low .

Anticipated Issues: State inconsistency on definition or lack of use of h/m/l ratings by states in their current SWAP methodology. (31 states indicate in SWAP approach that they are using some sort of over all ranking H/M/L, other terms, or numeric). Also, SDWA mandated assessments are a one time deal and many states don't plan to be re-assessing or developing ways for a community to lower their susceptibility.

Issue Discussion:

Re-evaluation

States that have a feedback loop for communities to work with them to lower their susceptibility could display their new figures. States that don't have a reevaluation mechanism could show a static trend for their state (i.e., high areas staying high, lows staying low). In this way, there is no *added* burden to re-assess, but rather highlighting those that are taking initiative to work on lowering susceptibility.

Inconsistency

- S *Most flexible, low national consistency, and low national value :* Each state would report susceptibility with no nationally agreed upon
- S *medium flexibility, more consistency, higher national value:* Work with states to develop national guidelines for states to use that builds on states' existing susceptibility approach but allows national characterization.

- S** *Less flexibility, maximum consistency, high workload.* States would adopt a common definition of h/m/l regardless of their current EPA-approved susceptibility approach, and would interpret their susceptibility into the H/M/L (Ignores EPA-approved h/m/l state determination)
- d. *No reporting burden to states, maximum national consistency, but least state control of outcome:* Using a combination of national data layers and locations of water supplies to determine where there is h/m/l susceptibility for each PWS across the country (i.e. ignoring state assessment results, and creating a national susceptibility ranking)

1.2 # of PWS categorized by level of susceptibility with a state or tribally recognized source water contamination prevention plan (including watershed plans or resource-wide plans that address threats to the drinking water source).

State Value: The value is in collecting the information with associated locational data so that the state can see if a community's protection plans are leading to a lower susceptibility ranking. A state can't do this if both pieces of information are not tracked with locational data. Over time, the idea would be to work towards having highly susceptible water supplies lower their susceptibility by implementing effective protection measures. For states that have SWP, WHP, or Watershed programs, the value of collecting this information is also for accountability to their state legislatures on program progress.

National value: The national value is reporting to congress and the public on how states, tribes and localities are moving from assessment to protection through the first step of protection planning. Indicator of how well EPA and states are supporting localities in these efforts.

Availability/Accessibility: States have been collecting and reporting information through Wellhead Protection Programs or Watershed Programs, though nationally we were never asking for trends reporting – i.e., if communities with plans in place were lowering their risks through implementation over time – and so states may not currently be collecting the information in a way that allows for this kind of tracking. (They may not actually store a list of the communities and PWS identification numbers with plans in place).

Burden: Some states do not have a mechanism in place for collecting information or providing assistance to communities implementing contamination prevention for their source waters. Burden to set up these types of programs or figure out how to gather the data from other programs.

Anticipated issues:

- Inconsistency on what constitutes an adequate state or tribally certified local source water contamination prevention plan.
- State burden to review and certify locally based prevention plans. States are not federally required to develop source water contamination prevention programs to

guide local communities beyond wellhead.

Issues Discussion:

- Work with states and tribes to develop national guidance.
- Develop a national guidance with states and tribes that outlines a minimal expectation of what of what constitutes a valuable locally based source water contamination prevention plan. States with no intention of working with local communities to institute prevention measures and engage in prevention planning, could report zero.

Are there other baseline data that will better show the lowering of susceptibility linked to preventative actions taken?

Some additional EPA-based information outside of the state SWAPs and WHP

- 1.3 Sole Source Aquifers:** EPA could start to improve the information about the impacts of sole source aquifer designations on a community's interest in source water protection, and see if SSA designation leads to lowered susceptibility.

Availability: SSA information is available from EPA regions. Collecting the data on related activities taken by communities would require more effort by EPA.

Accessibility: electronically available

Cost: Added FTE to begin to look at activities taken by communities in SSAs

Why needed at the state level: An additional tool for use by states and communities.

Why needed at the national level:

- Accountability for progress of SSAs, and statutory mandate of EPA to review projects.
- Indicates the level of community interest potentially catalyzed by a SSA designation.

- 1.4 Water Conservation Plans/DWSRF loan requirements:** Congress included a provision in the statute that required EPA to provide guidance on how to develop a water conservation plan. States could link loan requirements for PWSS to the development of a water conservation plan: i.e. without a plan, a PWS wouldn't be eligible for a loan. # of states with water conservation planning tied to DWSRF loan requirements.

- 1.5 Watershed Restoration Action Strategies that include source water protection.**

Examination of Number Two: Changes in the nature of potential contaminant threats of high concern in source water areas

Again, the baseline for this piece of information could be the source water assessments. While the Clean Water Act Section 305(b) Report asks states to report on this, the source water assessments allow the opportunity to be more thorough in identifying what are the potential contaminant sources being found within source water areas that the state deems are of most

concern across their state as a whole (perhaps through the 305(b) reporting). Over time, a change in what are the threats of most concern to states would be an indicator that the original concerns were dealt with (or that new concerns have taken over).

2.1 Most prevalent potential contaminant sources or types of contaminants found in source water areas by state and tribe.

State Value depends on locational data: State source water programs can help direct other state programs to assist with potential contaminant sources relevant to their programs, and direct resources to address the most threatening sources or contaminants in the state.

National value: the cumulative report for each state as to what are the potential contaminant sources being found within source water areas that pose the most concern, helps EPA to prioritize what type of prevention policies to pursue within EPA and with other agencies and programs, and direct other programs to regional concerns. In terms of Congressional reporting, the information will help them make decisions over the need for focus on particular contaminant sources or contaminants for future legislative decisions.

Availability: state source water assessments augmenting state 305(b) reporting. Most states will have electronic databases with maps of the sources and identification of those posing the most threat as part of their susceptibility determination.

Cost: depending on option the costs differ.

Anticipated Issues: Potentially burdensome for states to query their information from their data bases for a cumulative look at the inventories in their source water assessments.

Issues Discussion

Option A. High reporting burden , but most useful to making national decisions on prevalent contaminant source threats: Reporting the results of source water assessments, states would identify the most prevalent potential contaminant source types and contaminants inventoried in source water areas across the state which the state has determined are potential threats to source waters.

Option B. Lower reporting burden, lesser national value, but could support some national decision making. States report the # of source water areas where potential contaminant sources have been found by contaminant type (suggested categories - pesticides, other VOCs, IOCs, microorganisms, and radio nuclides).

Option C. Lowest reporting burden, lower national value: States report the # of source water areas where potential contaminant sources were found in those areas. There is low national value on this, because it doesn't identify any of the types of contaminant sources.

Examination of Number Three:

Change in drinking water contaminants of concern detected in source waters

Why needed at the state level: Helps to indicate the most serious problems in the state and if there are trends over time marking improvement in water quality.

Why needed at the national level:

1. Indicates whether source water quality is degrading or improving, whether there needs to be national concern, if it is degrading., and decide on remedies.
2. Objective data translates to a high message value.

Availability: some baseline is available through 305(b) monitoring, as well as some drinking water monitoring data. Some states have compiled what information is available in their states on source water quality as part of their assessments

Accessibility: The 305(b) and 303(d) assessment mechanisms should be a means of accessing this data. Hopefully states are moving towards incorporating drinking water monitoring data gathered by their PWSS into their monitoring reporting.

Cost: No extra, if use the status quo. More, if there is need to actually start monitoring programs for source waters.

Anticipated Issues:

- State drinking water/source water programs do not have adequate ambient water quality monitoring data, and it would be costly to set up a monitoring program for source waters state wide.
- Large federal and state commitment needed to compile and analyze data

Issues Discussion:

305(b) monitoring could provide data on pathogens and the presence of regulated drinking water contaminants in ambient surface waters. Some drinking water programs have monitoring for drinking water wells with conventional treatment. Compliance and other monitoring data could provide a primitive indicator of which contaminants are becoming more or less prevalent.

Option A. Most flexible: States not responsible for reporting data. Work with USGS trends analysis to develop a source water quality index that could answer this question.

Option B. Less flexible: state drinking water compliance monitoring and 305(b) monitoring programs responsible for helping to collect ambient water quality data for source waters in the state. Combine this with national USGS effort

Tracking indicators to examine trends in CWA/SDWA linkages

of states with WQS in place for all surface waters used as public water supplies (including ground water under the direct influence), and ambient human health water quality criteria for regulated drinking water contaminants.

of states with ambient water quality monitoring data for drinking water sources.
of drinking water sources meeting their designated use
of 303(d) listed waters designated as a drinking water use

Examination of number four: Number of source water assessments completed

Why needed: Accountability to Congress and the public.

Collecting information on the number of state source assessments completed: delineations, inventories, and susceptibility determinations made available to the public

Examination of number five: National Locational Data Layer of Source Water Areas

State Value: Reduces burden for states to need to supply source water locational data to other federal agencies in order to influence policies. Increases efficacy of state information being used to drive national policy. Useful at state level to influence state policies.

National Value: Increases efficiency in incorporating source water data into national regulations, policies, and budgeted projects. Increased ability to show the public the extent of source water areas across the country, and gives increased ability to see how these areas would be impacted by future regulatory policy decisions of different agencies.

Availability/Accessibility: Over 90% of states are collecting their source water areas in GIS format with locational data.

National Consistency: Locational data may be in different forms that need to be translated to be put in a national data layer.

Burden: The burden is on EPA to come up with a platform that can accept the varying datasets and accurately pull them together.

Examination of number six: Resource needs to protect drinking water supplies.

6.1 Total dollars needed, as calculated by the state, to implement state approved local source water protection plans

Why needed at the state level: Could be valuable aid for defining SWP needs for state budgets as well as for other private and federal funders in the state.

Why needed at the national level:

- Provides part of the basis for future state and federal funding decisions.
- Indicates the level of need, providing context for examining present allocations, and justifying future allocations for source water protection.

Availability/Accessibility: Not currently available in most states

Cost: national cost to develop a template for calculating SWP implementation costs. State resources to compile information.

Anticipated issues: It is too burdensome for states to develop a sound methodology for estimating local costs because of the variability from plan to plan. Therefore “Needs” would be guesstimating, and most likely will be over inflated and therefore meaningless.

Issue Discussion: To keep the costs from being inflated and viewed as “random”, a state/EPA/tribe/PWS workgroup could produce a worksheet for use by states and localities to estimate the costs of implementation of a local plan, and what sources they would rely on (local/county resources vs federal, state and private). This could help lead to some reliable cost estimations, useful also at the state level to work with state legislatures and administrations.

6.2 Dollars targeted to source water contamination prevention efforts by state. (federal state, local)

Why needed at the state level: accountability. Shows what resources are going where. If showing multiple sources, can bolster state’s argument for cross-program attention to source water.

Why needed at the national level:

- Indication of cross-program support of source water protection, and rating the success of a “comprehensive approach” that depends on existing authorities and programs rather than creating a new tier.

Availability: varies depending on option. States have data on their budgets. Federal have data on their budgets.

Burden: varies depending on option. Low cost for just reporting single program allocations. More cost for a more comprehensive accounting.

Anticipated issues: Burden of reporting if the state drinking water/source water programs are asked to compile the information

Issue Discussion:

Option A: Least comprehensive, not indicative of cross-program support, but shows state general support. State Source Water/Drinking Water Programs would not be responsible for compiling the total number. They would show us what their state environmental/health offices budgeted to source water protection. EPA would calculate the funds from other federal agencies. Local level funds would be left out of the equation.

Option B: Moderately Comprehensive, less burdensome, potential indicator of change in support levels across programs, but doesn’t get at actual funding levels: # and type (land management, point source, agriculture, community awareness, etc) of federal and state programs with explicit policies for targeting funds to source water protection.

Option C: More comprehensive. State reporting of state “source water protection funds” would include the portions of prevention programs such as UST, UIC, Watershed, 319, and others that were allocated to protecting drinking water sources. EPA would

calculate the funds from other federal agencies. Local level funds would be left out of the equation. *Advantage: starts to show if there are any changes in other state protection programs targeting dollars to source water.*

Option D: *Most comprehensive.* States reporting of state allocations as described in option 2, plus a state total of local funds being allocated within the state. EPA would calculate the funds from other federal agencies, breaking it out by state.

6.3 Projects funded by CWSRF and CWA allocated dollars to address a source water threat. Helps EPA evaluate if there is cross-program priority setting between the CWA and SDWA programs.

Memorandum

Subject: Review of Draft UIC Data Matrix

From: Joan Harrigan-Farrelly, Acting Chief
Drinking Water Prevention Branch
Drinking Water Protection Division (4606)

To: Addressees

Attached for your review and comment is the UIC portion of the data matrix, still in draft form, that you have seen in previous incarnations. During the process of developing the strategy and measures, there was much discussion concerning what questions we are truly attempting to answer. Out of our discussions, four key questions were placed on the table that seems to be agreeable to all parties. The questions are in the attached matrix (pgs. 5 & 6) as a table divided into two categories: Class I, II, III, and IV program elements and Class V program elements. For each of the questions we need your help in identifying the appropriate elements of the UIC Program that we want to measure. The information that currently appears in the matrix is our attempt to address the issues and concerns discussed at the Seattle and Denver meetings. We also have tried to incorporate measures developed by a Regional workgroup and by the 7520 Workgroup. Please keep in mind that we were admonished by stakeholders and partners to come up with a “handful” of meaningful measures. There were four principles that were also agreed upon that should guide the measures as follows: 1. small quantity, accurate, 3. quantifiable, and 4. Implementable. Before you begin your review, please read the following information to understand what our thinking is about what each question means to the UIC Program.

“What is the status of the SDWA ‘Building Blocks’ for prevention?”

Given that the State and DI UIC programs are SDWA building blocks for prevention, we decided to focus on the level of activity in core program areas as the pieces of the building blocks that would tell us whether or not we were making a difference for public health. These include resource management, compliance/enforcement, permitting, surveillance, aquifer exemptions and technical/compliance assistance. (See: the elements that comprise an effective UIC program in UIC National Program Guidance #42.)

“What are the potential threats/nature and the extent of the risk to source water?”

An injection well has the potential to contaminate source water through five pathways: faulty well construction, nearby wells, faults or fractures in confining strata, lateral displacement of fluids and direct injection. Under this question we describe potential threats which address the compliance status of injection wells.

“What is being done to protect source waters?”

We selected some elements in the core program areas to measure for level of activity as indicators of whether or not State and DI programs are reducing or eliminating the potential threats to source water. Most of these elements are currently reported under the Federal Reporting System for the UIC Program (7520 Forms). The remaining elements are currently reported informally on an as needed basis.

State and DI programs are required to report summary information to OGWDW and OECA: 19 elements under Permit Review and Issuance/ Area of Review, 30 elements under Inspections and MIT, 20 elements under Compliance Evaluation, 22 elements under SNC, and varying amounts of information on the Exceptions list. All information is reported by # of wells (by well class) and # of activities (by activity type). UIC Programs are also required to report inventory information by well class and well status.

The following table shows the difference between current reporting requirements and our proposed reporting requirements¹.

Core Program Area	Current required reporting for Class I, II, III and IV wells (by # of wells and # of activities by type or well status)	Proposed required reporting for Class I, II, III, and IV wells (by # of wells by class and # of activities by type or well status)	Change in reporting burden
Program Management (\$\$ spent on inventory effort,)	Not reported	(NEW) # injection wells with lat/long	One new element

¹ Class V is not included in this table, because it currently is treated separately in the matrix.

Compliance/ Enforcement (reported on 7520-2A and SNC on 7520-2B)	-20 elements under CE -22 elements under SNC	-5 elements under CE: # of wells with enforcement # of wells returned to compliance # of civil actions # criminal actions # administrative orders -6 elements under SNC: # of Class IV well closures # of wells with enforcement # of wells returned to compliance # of civil actions # criminal actions # administrative orders	Decrease
Permitting Issuance/ Area of Review (7520-1)	19 elements	-5 elements: # of wells issued permits # of wells denied permits (NEW) # of Class I HW petitions approved (NEW) # of Class I HW petitions denied # of wells in the AOR that receive corrective actions	Decrease -- But two new elements
Surveillance (Inspections/ Mechanical Integrity Tests) (7520-3)	30 elements	-4 elements: # of Field inspections # of wells passed MIT # of wells failed MIT # of MIT witnessed by regulator (NEW) # of contamination investigations linked to injection wells	Decrease – But one new element
Aquifer Exemptions	Not reported	(NEW) # of exemption applications approved/denied	One New element
Technical/ Compliance Assistance	Not reported	(NEW) # of products/services developed and distributed/performed -(NEW) # of cross program/cross agency activities initiated	Two New elements

“Are the source water contamination prevention efforts making a difference for public health?”

Finally, under this question, we have listed indicators of program effectiveness. You will see that, with one exception, we are still “counting beans.” Although some have contented that like police departments that implement and enforce prevention programs, it is difficult to link one activity to a specific change in public health and welfare. We are hopeful that there might be some tangible way to make this connection.

Please review the UIC elements in the attached table, and tell us whether they capture the information that OGWDW and OECA need to determine the effectiveness of State and DI programs in protecting source water from contamination by injection wells and whether the information can inform/inspire national leaders and the general public.

We will keep you apprized of our efforts at various stages of development of our prevention measures. This information is part of our overall National Drinking Water

Contamination Prevention Strategy. We look forward to receiving your input both in writing and verbally.

Please don't hesitate to contact Bob E. Smith at (202)260-5559 with any concerns.

Attachments

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Roger Reinhart, Region III	Marty Barnes, Texas
Karen Johnson, Region III	Mike Stetter, California
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Steve Roy, Region V	Stan Belieu, Nebraska
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Dan Jackson, Region VIII	

Nathan Wiser, Region VIII

Gregg Olson, Region IX

George Robin, Region IX

Laura Bose, Region IX

Grover Partee, Region X

Key National Questions and Measures
Source Water Contamination Prevention – UIC input 11/17/00

	<i>What is the status of the SDWA “Building Blocks” for Prevention?</i>	<i>What are the potential threats/nature and the extent of the risk to source water?</i>	<i>What is being done to protect source waters?</i>	<i>Are the source water contamination prevention efforts making a difference for public health?</i>
UIC Class I, II, III, IV	--\$\$/FTE needed by UIC Programs --\$\$/FTE allocated by EPA to State/Tribal/DI/ UIC programs --\$\$/FTE spent by State/Tribal/DI/ UIC programs --# of States completed 147 --# of DI Programs --# of Tribes with primacy --# of Compliance/Enforcement activities --# of Permitting Activities --# of Surveillance Activities --# of Aquifer Exemptions --# of Technical/compliance Assistance Activities	# of injection wells identified in source water protection areas Other areas of States and Tribal Lands (lat/long) --# of Class IV wells discharging to USDW --# of Class I, II and III wells in noncompliance/SNC with permit or rule requirements in source water protection areas and Other Areas in States and Tribal Lands # of unauthorized injection wells # of Class I, II and III wells without mechanical integrity # of injection/production wells in aquifers that are mineral bearing/hydrocarbon producing --# of Class I, II, III well o/o in compliance --# of trained inspectors	# of States/Tribes/DI Programs with active Class I, II, III and IV inventory efforts --# of Class IV well closures -- # of Class I, II, III wells addressed by enforcement and returned to compliance (includes SNC data) --# of civil and criminal actions against Class I, II, and III well o/o referred by States/Tribes/DI Programs (includes SNC) --# of administrative orders issued by States/Tribes/DI Programs to Class I, II, and III well o/o (includes SNC) --#of Class I, II, III wells issued/denied permits --# and Class I hazardous waste petitions approved/denied --# wells in the area of review of Class I, II, III wells that receive corrective actions --# of Field inspections of Class I, II, and III wells --# of Class I, II, and III wells with MIT (pass/fail rate) --# of MIT on Class I, II, and III wells witnessed by regulatory authority --# of contamination investigations linked to Class I, II, and III wells --# of exemption applications approved/denied --#of products/services developed and distributed/performed --# of cross program/cross agency activities initiated	Change in the number of Class I, II, III, and IV wells that can be associated with public water systems, source water protection areas and Other areas of the State and Tribal Lands (lat/long data) --Change in the number of Class IV wells that discharge hazardous waste directly or indirectly to USDW --Change in the compliance rate of Class I, II, and III wells --Changes in population protected through properly permitted Class I, II and III wells --Change in the number of wells in the area of review of Class I, II, III wells that are potential treats to source water -- Change in number of alleged cases of USDW contamination linked to Class I, II, and III wells --Change in MIT pass/failure rate of Class I, II, and III wells Change in application approval/denial rate Change in compliance rate of Class I, II and III wells

	<i>What is the status of the SDWA "Building Blocks" for Prevention?</i>	<i>What are the potential threats/nature and the extent of the risk to source water?</i>	<i>What is being done to protect source waters?</i>	<i>Are the source water contamination prevention efforts making a difference for public health?</i>
UIC Class V	<p>--\$\$/FTE needed by UIC Programs --\$\$/FTE allocated by EPA to State/Tribal/DI/ UIC programs --\$\$/FTE spent by State/Tribal/DI/ UIC programs # of States/Tribes that have formally adopted the Class V Rule # of States/Tribes/DI/Programs that implement Class V programs</p> <p>--# of Compliance/Enforcement activities</p> <p>--# of Permitting Activities</p> <p>--# of Surveillance Activities</p> <p>--# of Technical/compliance Assistance Activities</p>	<p># of Class V wells identified in source water protection areas and other areas of States and Tribal Lands (Lat/Long)</p> <p>--# of endangering Class V wells in source water protection areas and other areas of States and Tribal Lands --# of Class V wells in noncompliance with permit or rule requirements in source water protection areas and other areas of States and Tribal Lands</p> <p># of unauthorized Class V wells in source water protection areas and other areas of States and Tribal Lands</p> <p># of Class V wells in source water protection areas and other areas of States and Tribal Lands</p> <p>--# of Class V well o/o in compliance --# of trained Class V inspectors</p>	<p># of States/Tribes/DI Programs with active inventory efforts</p> <p>--# of Class V well closures --# of MVWDW well closures in ground water protection areas and Other sensitive areas --# of large capacity cesspools closed -- # of Class V wells addressed by enforcement and returned to compliance --# of civil and criminal actions against Class V well o/o referred by States/Tribes/DI Programs --# of administrative orders issued by States/Tribes/DI Programs to Class V well o/o</p> <p>--#of Class V wells issued/denied permits --# of MVWDW well issued permits in ground water protection areas and other sensitive areas --# wells in the area of review of Class V wells that receive corrective actions</p> <p>--# of Field inspections of Class V wells in source water protection areas and other areas of States and Tribal Lands --# of contamination investigations linked to Class I, II, and III wells</p> <p>--#of activities targeting owners and operators --#of products/services developed and distributed --# of cross-programs/cross-agencies activities</p>	<p>Change in the number of Class V wells that can be associated with public water systems, source water protection areas and Other areas of the State and Tribal Lands (lat/long data)</p> <p>--Change in the number of Class V wells that endanger USDW --Change in the number of MVWDW in ground water protection areas and other sensitive areas --Change in the number of large capacity cesspools --Change in the compliance rate of Class V wells</p> <p>--Changes in population protected through properly permitted Class V wells --Change in the number of wells in the area of review of Class V wells that are potential treats to source water protection areas and other areas of States and Tribal Lands</p> <p>-- Change in number of alleged cases of USDW contamination linked to Class V wells</p> <p>Change in compliance rate of Class I, II and III wells</p>